ENERPIPE

Natural Energy Solutions

HEATING REGULATOR EPC11
End user manual

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1 Safety notes

Danger of scalding:
Some parts of this system may reach temperatures exceeding 55°C (for thresholds of burning, see EN 563). Be sure to point out all possibly existingdangers (such as touchable surfaces, high temperatures of used water) to all persons operating this system.

Danger of freezing:
Make sure that the selector switch does not remain in the MAINTENANCE position forlonger periods of time during winter. The heating pipes may freeze up.

MAINTENANCE position: There is no antifreeze monitoring!

CAUTION:
To disconnect the unit from the mains,
use the all-polar switch on the part of the builder.

Only a qualified expert must open the unit.

The unit is completely maintenance-free.

2 Regulator

2.1 Key allocation

Correction Day-/ Night Mode
(-4,0°C to +4,0°C or -8,0°C to 0,0°C)

Abort Key
„Escape“

Navigation Key
„Up“

Navigation Key
„Down“

Confirm Key
„Enter“

Modes

- OFF / Antifreeze (Blue)
- Lowering Mode (Orange)
- Heating Mode (Orange)
- Automatic Mode (Green)
- Boiler Mode (Orange)
- Party-Modus (Orange)
- MAINTANANCE (Red)

2.2 Modes

A lamp on the selector switch indicates the current mode. The newly selected mode will be displayed on the regulator screen when changing another mode.

Off / Antifreeze

The regulator's operation will be deactivated except of the antifreeze switch function. The antifreeze switch function will be activated when the external temperature falls below the antifreeze temperature.

Lowering Mode

The lowering mode of the heating circuits will be activated regardless of the timer program, i.e. the required temperature will be reduced in accordance with the settings. Remote control has priority. For explanation, please refer to „Room remote control“ on page 16.

Heating Mode

The heating mode of the heating circuits will be activated regardless of the timer program. Remote control has priority. For explanation, please refer to „Room remote control“ on page 16.

Automatic Mode

The mode of the heating circuits (heating or lowering mode) depends on the timer program and remote control.

Boiler Mode

The heating circuits are deactivated except of the antifreeze. The boiler is charges in the usual way.

Party Mode

The heating mode of the heating circuits is activated for a certain period of time (adjustable). After this period of time has expired, the regulator returns to the last selected mode.

MAINTENANCE

Switching off all outputs; no regulator function will occur.

CAUTION: NO Antifreeze!

2.3 Correction of Day/Night Mode

Day mode – Correction of day mode

The day mode must be set with the rotary button on the top right. The value can be set from -4°C to +4°C and causes a permanent increase in the heating circuits' temperature of the initial operation during day mode. The value here stands for the room temperature. If no room sensor is connected, this value is regarded as increasing or lowering the respective temperature of initial operation, respectively, so the room temperature around the set value will be changed.

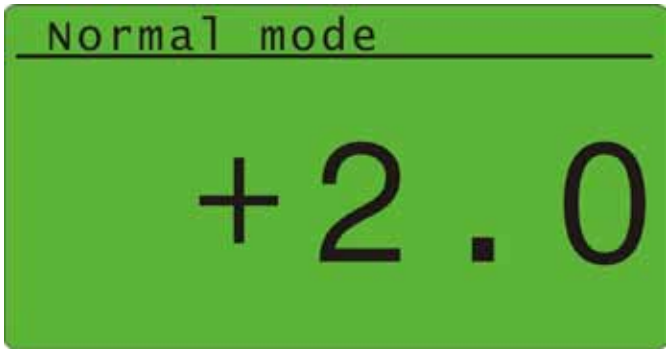


Figure 1: Correction of day mode

Lowering Mode – Correction of Lowering Mode

The lowering mode is set with the rotary button on the top right and then with the arrow key. The correction mode for the lowering mode has now been activated. This value can be set from -8°C to 0°C and causes a permanent adaptation in the heating circuits' temperature of the initial operation during the lowering mode. The value here stands for the room temperature. If no room sensor is connected, this value is regarded as increasing or lowering the respective temperature of initial operation, respectively, so the room temperature around the set value will be changed.

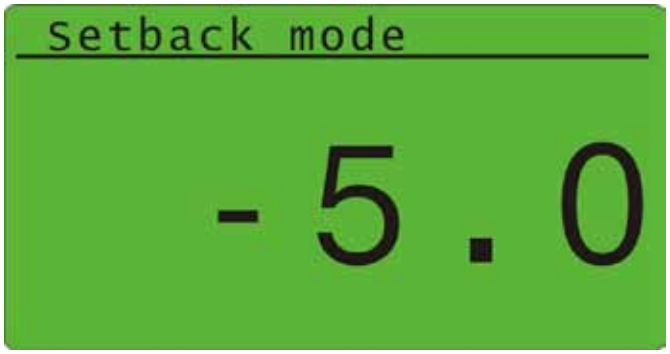


Figure 2: Correction of lowering mode

3 Regulator menu

3.1 Main Menu

The main menu shows all the functions of the regulator. Apart from that, the regulator indicates the current modes as well as the current temperatures of the individually controlled components.

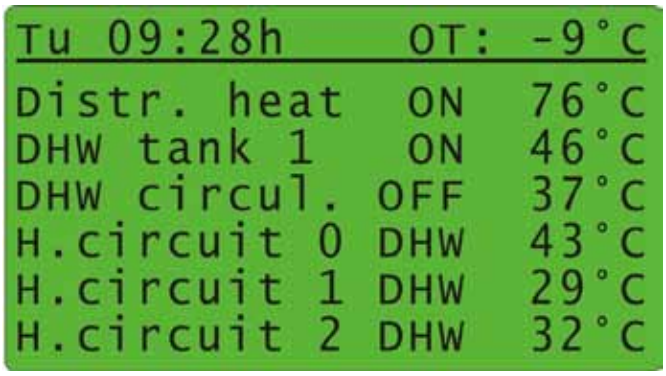


Figure 3: Main menu

CAUTION: Menu items which do not open are not accessible in your current level of authorization. For changes and questions, consult your district heating operator.

Modes for district heating

OFF The district heating is not activated, there is no energy transmission
ON The district heating is in normal operation mode
RLB The limitation to return is activated
LBG The power output limitation is activated
MAN The district heating valve is in manual mode (manual)
EXT The district heating is OFF, supply through external sources of energy (e.g.boiler)

Limitation to return
The district heating return temperature is limited to a value set by the district heating operator. For questions or requests for changes in this function, consult your district heating operator.

Power output limitation
The supply power is limited to the connect load as per your contract. For questions or requests for changes in this function, consult your district heating operator.

Operation modes of heating circuits

OFF The heating circuit is not activated
ON The heating circuit is in normal operation mode
RPW Residual power → electric water heater is preferred; the heating circuit is reset
SBK The heating circuit is in lowering mode
DHW Secondary warm-water setting → heating circuit is OFF during boiler charging
FP The antifreeze is activatedBetriebsarten Solar
BCK Blocking → e.g. within blocking time (=OFF)
MAN Manual operation
AHZ Baking-out program → Drying of stone floor is activated
EXT External required default value (=ON)

Operation modes of domestic hot water tank

OFF The tank is in charging mode
ON The tank is in loading time
MAN Manual operation
FP The antifreeze is activated
MIN The minimum load is activated

LSP Blocking of load → temperature of initial operation has not been reached
EXT Release for external tank charging

Operation modes of circulation
OFF The circulating pump is not activated
ON The circulating pump is activated

Operation modes of solar heating
OFF The solar pump is not activated
ON The solar pump is activated

Operation modes of buffer
OFF The charging pump is not activated
ON The charging pump is activated

Operation modes of generator
OFF The generator is not activated
ON The generator is activated

Operation modes of intermediate circuit pump
OFF The pump is not activated
ON The pump is activated

3.2 District Heating
The transfer station is called as district heating; it supplies the heat energy via a heat exchanger.

Primary Valve
This indicates the status of the opened district heating valve.

Max. return temperature
The set highest return temperature into the district heating network.

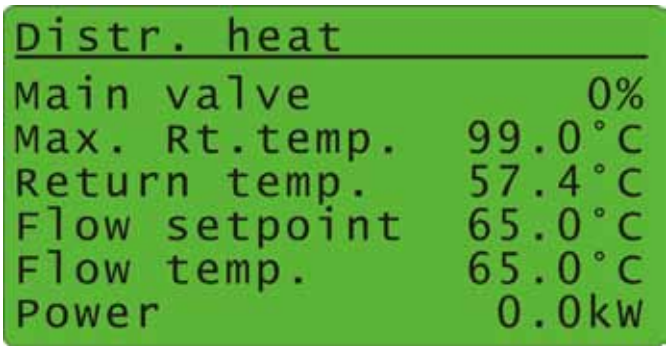


Figure 4: District heating menu

Return temperature
The current return temperature into the district heating network.

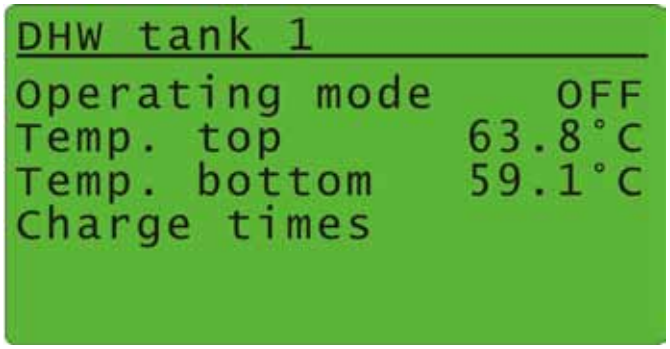
Power
This indicates the current power output of district heating to the transfer station.

Counter
When selecting this menu item, the heating counter data menu will open up. This menu will show the most important data if a heating counter is connected and connected with the regulator.

Figure 5: Heat meter menu

3.3 Domestic hot water tank

The warm-water boiler is used to prepare and make available the necessary heated water for usage.



Figurre 6: DHW tank menu

Mode

This indicates the current operation mode of the boiler.

MinChg The boiler always carries out a minimum loading outside its loading time if the minimum temperature of the boiler has fallen below.

DisInf The boiler carries out its weekly disinfection charge.

Upper temperature

This indicates the current upper boiler temperature. Moreover, you can set the „required boiler temperature“ and the „minimum boiler temperature“ here.

Required boiler temperature (defaul t 55°C)
The required boiler temperature indicates which temperature (measured on the upper boiler sensor) should be selected to charge the boiler within a loading time or during a minimum temperature charge, respectively.

Minimum boiler temperature (default 45°C)
The minimum temperature shows the lower limit for the charging status of the boiler (measured on the upper boiler) and causes a subsequent charging, if the temperature has fallen below.

Lower temperature

This indicates the current lower boiler temperature.

Loading times

This is to configure the loading times of the boiler.

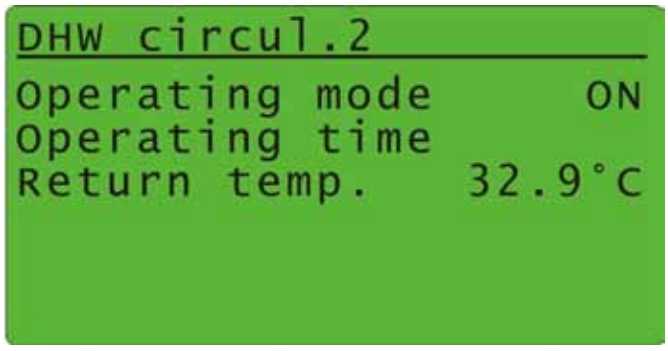


Figure 7: Circulation menu

3.4 Circulation

A circulation pump is used to immediately prepare and make available the heated water in a building. For this purpose, the heated water in the warm water boiler is continuously circulated through the water pipe. This is to prevent the water for usage from cooling off in the pipe. If there is no circulation pump, only cold water would be available to the user when turning on the tap.

Mode

This indicates, whether the circulation is in operation or not.

Operation times

The fixes operation times for the circulation pump can be set here.

Return temperature

This indicates the return temperature of the circulation to the warm-water boiler.

3.5 Heating circuits

A heating circuit stands for a cycle of heated water through a heating system (such as radiators, floor heating, etc.).

CAUTION: If the regulator's selector switch is set to OFF/Antifreeze, boiler charging or maintenance, the selector switch of the regulator will have priority over the remote control.

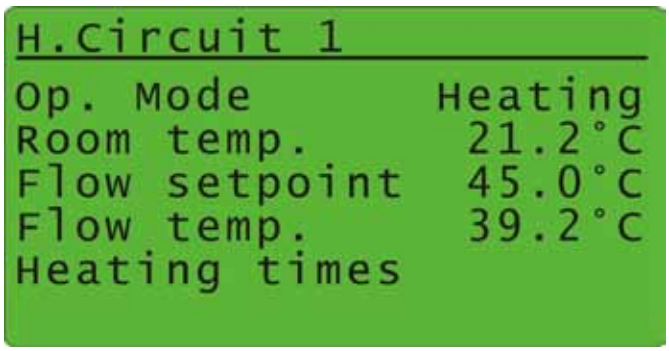


Figure 8: Heating circuit menu without room control

Mode

This indicates the current operation mode of the heating circuit.

Selector switch

The operation mode of the regulator is applicable. However, if it is set to the heating, lowering mode or to OFF, the remote control will have priority.

Party mode

If the party mode has been set for the heating circuit, the heating circuit will switch to the heating mode for the period of time set for the party mode. Once this period of time has expired, the heating circuit will return to the previous operation mode.

Timer program

Regardless of the selector switch or remote control, the heating circuit is in heating mode during heating times, and in the lowering mode outside the heating times.

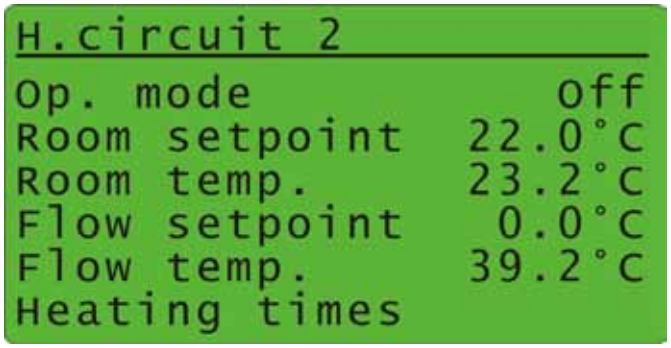


Figure 9: Heating circuit menu with room control

He ating mode

The heating circuit is continuous in the heating mode.

Lowering mode

The heating circuit is continuous in the lowering mode.

OFF / Antifreeze

No control function of the heating circuit at all, except of the antifreeze function.

Required room temperature

The desired required room temperature can be set here. However, the required room temperature will be visible only if a room remote control has been connected.

Room temperature

This indicates the current room temperature of the heating circuit. However, the room temperature will be visible only if a room remote control or a sensor has been connected.

Required temperature of initial operation

This indicates the current required initial operation of the heating circuit. Moreover, the „switch-off temperatures" can be configured here as well.

Switch-off temperature of day mode (default: 18°C)
If the mean value of the external temperature exceeds this value during day mode, the respective heating circuit will be switched off (heating circuit pump off, mixing valve CLOSED).

Switch-off temperature of lowering mode (default: 10°C)
If the mean value of the external temperature exceeds this value during lowering mode, the respective heating circuit will be switched off (heating circuit pump off, mixing valve CLOSED).

Actual temperature of initial operation
This indicates the actual temperature of initial operation of the respective heating circuit.

Heating times/Lowering times
The heating times or lowering times for the selected heating circuit can be defined here. The type of the times is set in the basic configuration of the regulator. Thus these terms in this menu item are called heating times or lowering times. For changes or questions, consult your district heating operator.

3.6 Buffer tank (heating tank)
The buffer or heating boiler is a container which is used for storing heat energy. It is used to store the energy obtained through district heating, solar system or similar in order to avoid a continuous request for heat energy.

Figure 10: Buffer tank menu

Rotational speed of pump
This indicates the rotational speed of the buffer-charging pump.

Upper temperature
This indicates the current upper buffer temperature.

Upper required temperature
This indicates the required temperature of the buffer. It is the result of the maximum required initial operation. If this maximum required initial operation is lower than the „minimum upper buffer temperature“ this value will be used as required initial operation. This value can be configured when selecting this item.

Minim um upper buffer temperature (default: 50°C)
This indicates the upper minimum temperature of the buffer.

Lower temperature
This indicates the current lower buffer temperature.

Lower required temperature
This indicates the currently calculated lower required temperature of the buffer.
The required temperature below is calculated with the maximum return of district heating minus hysteresis. The „hysteresis“ can be configured when selecting this item.

Hysteres is of maximum return temperature buffer OFF
This hysteresis is used for calculating the lower required buffer temperature.
The lower required temperature of the buffer is calculated with the maximum return temperature of district heating minus this hysteresis.

Buffer loading times
The loading times of the buffer can be set here.

3.7 Solar
The solar pump switches on as soon as the collector temperature is higher than the buffer temperature in addition to the hysteresis.

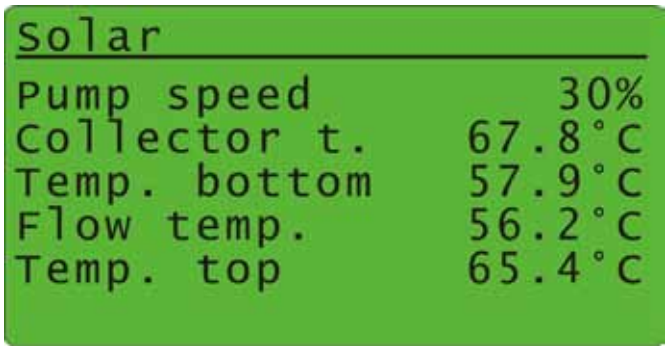


Figure 11: Solar menu

Rotational speed of pump
This indicates the current rotational speed of the solar pump.

Collector temperature
This indicates the current temperature of the solar collector.

Lower temperature
This indicates the current solar buffer temperature.

Temperature of initial solar operation
This value will only be visible if there is a module for regulating the rotational speed. Moreover, this value will only be necessary if the solar pump is controlled through the rotational speed.

Upper temperature
This value will only be visible if there is a module for regulating the rotational speed.

3.8 Generator
Any additional sources of energy (e.g. boiler) are called generator. The regulator itself distinguishes between a pure switching of a requirement of a generator.

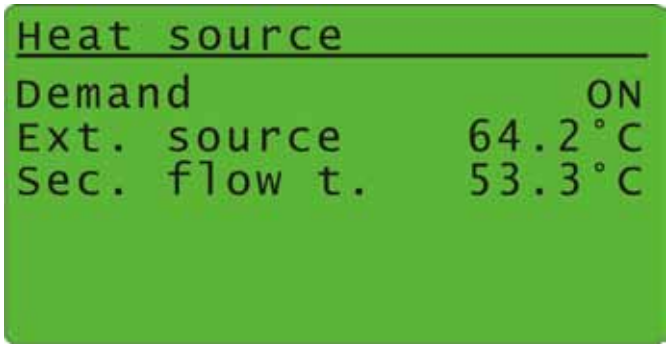


Figure 12: Switching heat source menu

Switching:
An existing heat generator is equipped with a temperature sensor. If the sensor value of the generator is higher than the required initial operation in addition to the hysteresis for switching on, the regulator will switch to the external heat generator. The district heating will stop supplying after a switching. The switching off occurs if the temperature of the generator is lower than the required initial operation in addition to the hysteresis of switching off.

Demand:
If, for a certain time, the required initial operation falls below the hysteresis for switching on, an existing heat generator (e.g. oil kettle) will switch on.

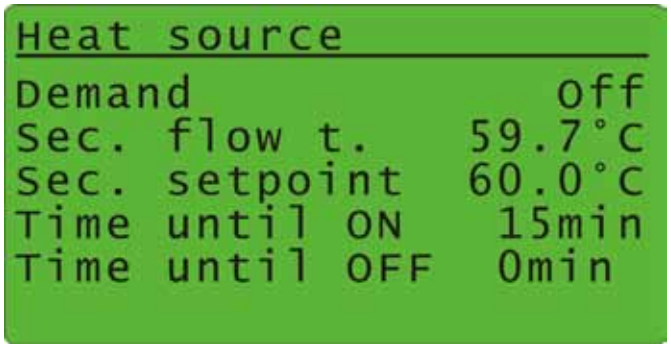


Figure 13: Demand heat source menu

Release
This indicates whether the external heat generator has been switched on.

External energy
This indicates the available temperature of external energy generators.

Secondary required initial operation
This indicates the current secondary required initial operation. If the item "Switching of generator" has been set here, the „hysteresis for switching on" as well as the „hysteresis for switching off" can be configured by way of confirming this item.

Hysteres is of switching off (default: +5°C)
The heat generator will be switched on if the temperature of the external heat generator is higher than the required initial operation in addition to this hysteresis.

Hysteres is of switching off (default: -5°C)
If the temperature of the external heat generator is lower than the required initial operator in addition to this hysteresis, the heat generator will switch off.

Secondary temperature of initial operation
This indicates the current secondary temperature of initial operation.

Time until ON
If the required initial operation falls below for a certain period of time, the generator will switch on when required. This also shows the duration until switching on. The parameter „Switching on of Timeout" can be configured when selecting this item.

Switching on of Timeout:
If the required initial operation for this time span falls below, the external heat generator will be switched on.

Time until OFF
This item in the menu will show the remaining duration until switching on. In this menu, the „minimum running time" of the external heat generator can be configured as well.

Minimum running time
The minimum running time will allow a minimum heating time of the external heat generator. The external heat generator will operate at least for this duration, if a release has been given. The purpose of this switching is that the heat generator will need a certain time in order to supply any energy at all. Moreover, this also makes a short initializing of the heat generator unnecessary.

3.9 Intermediate circuit pump
The intermediate circuit pump will switch on during the operation of a circuit. It is the pump of the main system.

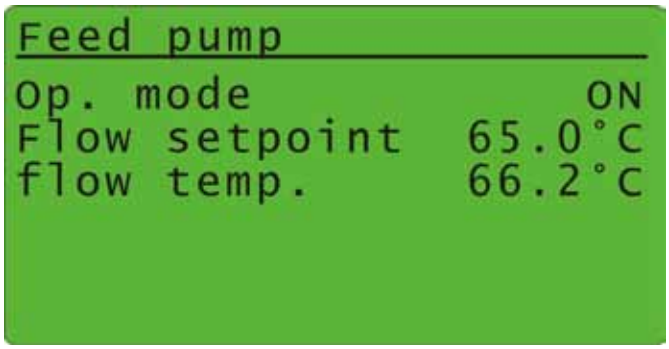


Figure 14: Feed pump menu

Mode
This indicates whether the intermediate circuit pump is activated or deactivated.

Secondary required initial operation
This indicates the required secondary initial operation of the transfer station.

Temperature of secondary initial operation
This indicates the temperature of the secondary initial operation of the transfer station. The secondary side is your home system, and the district heating on the primary part.

4 Room remote control

It is possible to provide each heating circuit with an own remote control. This remote control allows for selecting the following functions:

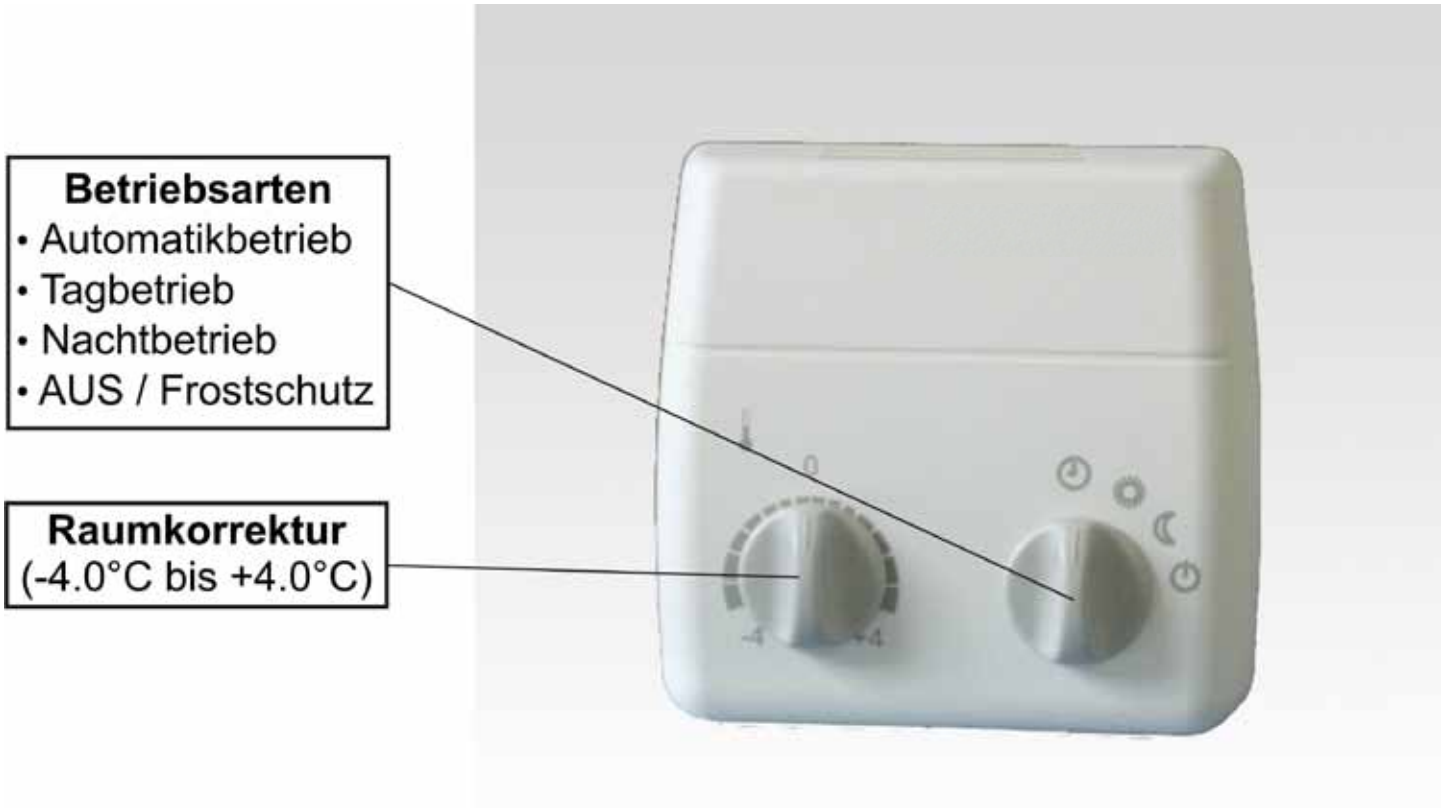


Figure 15: Remote control

A priority select switch **AUTOMATIC/DAY/NIGHT/OFF** is provided for pre-selecting the operation mode. An adjusting control with a range of plus/minus four degrees is provided for changing the required room temperature. A room sensor is integrated in the remote control, which can be used for applying various regulating programs for heating as well as for optimizing the ENERPIPE regulator.

CAUTION: The selector switch of the regulator will have priority over the remote control if the selector switch of the regulator is set to OFF/Antifreeze, boiler charging or maintenance.

5 Internal Level

5.1 Entrance into the level

Hold both arrow keys pressed in this main menu until the window Service Level appears on the regulator. You will now find 4 different menu items there.

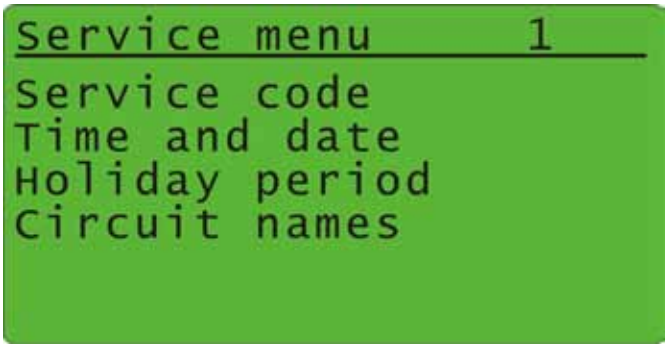


Figure 16: Internal level

5.2 Service code

The service code is necessary for internal work on the regulator. Your district heating operator is responsible for all information and work on this level.

5.3 Time and date

The regulator will set the clock time automatically, whereas an automatic synchronization of the clock time will be carried out once in 24 hours, if this regulator is connected with the district heating operator via network. If this is not the case, the clock time can be set manually.

5.4 Time of absence

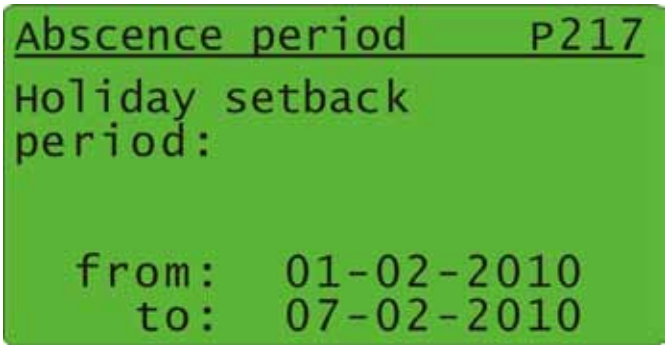


Figure 17: Menu of absence

Time of absence FROM

During a time of absence, all heating circuits will be regulated on permanent lowering. This setting will configure the first day of the absence function starting around 00:00.

Time of absence TO

During a time of absence, all heating circuits will be regulated on permanent lowering. This setting will configure the last day of the absence function ending at 24:00.

5.5 Naming the circuits

The individual heating circuits can be named individually here. As per default, the names with the „heating circuit“, including the number of the heating circuit are given.

6 Troubleshooting

6.1 Menu items cannot be opened

Individual menu items which do n ot open are not accessible in your current level of authorization. For changes and questions, please consult your district heating operator.

6.2 No temperature display

Please note that temperature will only be indicated if a temperature sensor is connected, and in full working condition, respectively. In case of a problem with a sensor, please consult your district heating operator immediately.

6.3 Other Problems

In case of other malfunctions, please consult your district heating operator immediately.

Notes:

Version: FW8.17
Release: 11.07.2011